

**Section II. (REMARKS)**

The pending claims in the application are claims 1, 3-5, 7 and 8.

**Amendment to claims 1, 3-6 and 8 and New Claim 32**

Claims 1, 3-5 and 8 have been amended herein to recite that the composition "consists of" the enumerated elements. The "comprising" language has been replaced with "consisting of" language **without prejudice**. Support for this amendment can be found throughout the specification, and particularly at paragraph [0022]. Claim 1 was further amended to include the limitations of previously pending claim 2. In addition, the reducing agent reinserted into claim 1 (i.e., formic acid from previously pending claim 30) was present in claim 1 as initially filed and examined. As such, no new matter has been cited herein and no new search is necessitated.

New claim 32 corresponds to claim 12 as filed.

**Election/Restrictions**

In the May 25, 2007 Office Action, the Examiner withdrew claims 6, 28, 29 and 31 from consideration as being directed to a non-elected invention. Applicants acknowledge same and request reconsideration of said claims upon allowance of the claims from which said withdrawn claims 6 and 31 depend.

In addition, applicants previously requested rejoinder of method claims 12, 14-19 and 21-27 upon allowance of the composition claims 1, 3-5, 7 and 8. Towards that end, withdrawn method claims 12, 14, 17-19, and 21 have been amended in a manner consistent with the pending composition claims, without prejudice.

**Rejection of Claims and Traversal Thereof**

In the May 25, 2007 Office Action:

claims 1-3, and 7-8 were rejected under 35 U.S.C. § 102(e) as being anticipated by Thomas et al. (U.S. Patent No. 6,893,995);

claims 1, 4, 7, and 8 were rejected under 35 U.S.C. § 102(b) as being anticipated by Martin (U.S. Patent No. 4,036,731);

claims 1-4, 7, and 8 were rejected under 35 U.S.C. § 102(b) as being anticipated by Li et al. (U.S. Patent No. 5,565,616); and

claims 1-5, 7, and 8 were rejected under 35 U.S.C. § 102(b) as being anticipated by Teich et al. (U.S. Patent No. 6,438,867).

These rejections are traversed and reconsideration of the patentability of the pending claims is requested in light of the following remarks.

### **Rejections under 35 U.S.C. §102**

1. In the May 25, 2007 Office Action, claims 1-3, 7, and 8 were rejected under 35 U.S.C. § 102(e) as being anticipated by Thomas et al. (U.S. Patent Number 6,893,995) (hereinafter Thomas). Applicants traverse said rejection.

Claim 1 has been amended herein to recite:

**“A SCF-based removal composition consisting of at least one supercritical fluid (SCF), at least one co-solvent, and at least one reducing agent, wherein the at least one reducing agent consists of at least one of hydrogen gas, formic acid, formaldehyde, formalin, boranes, diboranes, amine stabilized boranes, amine stabilized alanes, and tetraalkyl amines of  $BH_4$  and  $AlH_4$ , and wherein the at least one SCF consists of a fluid selected from the group consisting of carbon dioxide, oxygen, argon, krypton, and xenon.”**

Thomas relates to the deposition of a catalyst compound on a catalyst support using a supercritical-like solvent. The catalyst compound, such as a metallocene catalyst, is dissolved in the solvent to form a catalyst solution, the catalyst support is contacted with the catalyst solution, and the solvent is removed leaving a deposited catalyst on the catalyst support.

As noted, presently pending claim 1 has been amended to recite a supercritical fluid based removal composition consisting of at least one SCF, at least one co-solvent and at least one reducing agent.

It is well established as a matter of law that the transitional phrase "consisting of" excludes any element, step, or ingredient not specified in the claim. *In re Gray*, 53 F.2d 520, 11 USPQ 255 (CCPA 1931).

Applicants' claimed invention having the transitional phrase "consisting of" is not open to include a catalyst, e.g., metallocene, compound such as that required in the Thomas teaching. Accordingly, claim 1, as amended herein, is not anticipated by Thomas. Moreover, there is no reason that one skilled in the art would even consider Thomas, which relates to deposition, for compositions for the removal of material.

Accordingly, applicants respectfully request the Examiner withdraw its rejection of claims 1-3, 7, and 8 as being anticipated by Thomas.

2. In the May 25, 2007 Office Action, claims 1, 4, 7, and 8 were rejected under 35 U.S.C. § 102(b) as being anticipated by Martin (U.S. Patent No. 4,036,731). Applicants traverse such rejection.

Martin relates to a process for the hydrogenative extraction of coal using a solvent having a critical temperature between 150°C and 450°C, including water, hydrocarbons, and organic derivatives of hydrocarbons (see, Martin, the sentence bridging columns 2 and 3).

As introduced hereinabove, claim 1 recites a SCF-based composition, wherein the at least one SCF consists of a fluid selected from the group consisting of carbon dioxide ( $T_c = 31^\circ\text{C}$ ), oxygen ( $T_c = -118.6^\circ\text{C}$ ), argon ( $T_c = -122.3^\circ\text{C}$ ), krypton ( $T_c = -63.8^\circ\text{C}$ ), and xenon ( $T_c = 16.6^\circ\text{C}$ ).

Comparing Martin and applicants' claim 1, it can be seen that Martin does not expressly or impliedly teach the inclusion of applicants' SCF's. Moreover, there is no reason that one considering Martin would consider using any of the SCF's enumerated in applicants' claim 1.

Accordingly, applicants respectfully request the Examiner withdraw its rejection of claims 1, 4, 7, and 8 as being anticipated by Martin.

3. In the May 25, 2007 Office Action, claims 1-4, 7, and 8 were rejected under 35 U.S.C. § 102(b) as being anticipated by Li et al. (U.S. Patent No. 5,565,616) (hereinafter Li). Applicants traverse such rejection.

Li discloses a method requiring the use of supercritical or near critical water to produce alkanes from an alkyl bound to a heteroatom.

As introduced hereinabove, claim 1 recites a SCF-based composition, consisting of at least one SCF, at least one co-solvent and at least one reducing agent, wherein the at least one SCF consists of a fluid selected from the group consisting of carbon dioxide, oxygen, argon, krypton, and xenon. Applicants' claimed invention having the transitional phrase "consisting of" is not open to include supercritical or near critical water. Accordingly, claim 1, as amended herein, is not anticipated by Li. Moreover, there is no reason that one considering Li would consider using any of the SCF's enumerated in applicants' claim 1.

Accordingly, applicants respectfully request the Examiner withdraw its rejection of claims 1-4, 7, and 8 as being anticipated by Li.

4. In the May 25, 2007 Office Action, claims 1-5, 7, and 8 were rejected under 35 U.S.C. § 102(b) as being anticipated by Teich et al. (U.S. Patent No. 6,438,867) (hereinafter Teich). Applicants traverse such rejection.

According to the Examiner, Teich teaches various suitable drying solvents including alkanols, carbon dioxide, ammonia and formaldehyde.

Teich actually recites that:

"drying fluids whose critical data is not too high, in order to avoid more expensive apparatuses, are used as a convection stream or medium during the drying. Suitable drying fluids are ammonia, sulfur dioxide, nitrogen dioxide and sulfur hexafluoride; alkanes, such as propane, butane, pentane, hexane and cyclohexane; alkenes, such as C<sub>1</sub>-C<sub>7</sub> -n-, iso-, neo-, secondary or tertiary alkenes, e.g. ethene or propene; alkanols, such as methanol, ethanol, n-propanol, isopropanol or butanols; ethers, such as dimethyl or diethyl ether or tetrahydrofuran; aldehydes, such as formaldehyde or acetaldehyde; ketones, such as acetone; esters, such as the methyl, ethyl, n-propyl or isopropyl esters of formic, acetic or propionic acid; amines, such as mono-, di- and trimethyl- or -ethyl- or n- or isopropylamine or mixed alkylated amines thereof; and mixtures of two or more of these fluids." (see, Teich, col. 4, lines 46-61) (emphasis added)

and that:

“In addition to said drying fluids, supercritical carbon dioxide is also suitable for the drying fluid.” (see, Teich, col. 5, lines 2-3)

The latter recitation does not expressly state that the CO<sub>2</sub> may be mixed with at least one of the former enumerated solvents. Claim 6 of Teich further clarifies this fact by reciting:

“A process as claimed in claim 5, wherein the drying fluids used are C<sub>1</sub> - C<sub>6</sub> -alkanols, C<sub>1</sub> -C<sub>6</sub> -ethers, C<sub>1</sub> -C<sub>6</sub> -ketones, C<sub>1</sub> -C<sub>6</sub> -aldehydes, C<sub>1</sub> -C<sub>6</sub> -alkanes, C<sub>1</sub> -C<sub>6</sub> alkenes, C<sub>1</sub> -C<sub>6</sub> -esters or C<sub>1</sub> -C<sub>6</sub> -amines or carbon dioxide.” (see, Teich, claim 6) (emphasis added)

In other words, Teich does not expressly or impliedly teach that the supercritical CO<sub>2</sub> may be included with the other enumerated solvents such as alkanols and formaldehyde.

The Examiner is respectfully reminded that to be anticipatory, the elements in the prior art reference must be arranged as required by the claim. See, *In re Bond*, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). Teich does not satisfy this standard. Accordingly, Teich does not anticipate applicants' claimed invention.

Accordingly, applicants respectfully request the Examiner withdraw its rejection of claims 1-5, 7, and 8 as being anticipated by Teich.

#### **Petition for Extension of Time/Fees Payable**

Applicants hereby petition for a one (1) month extension of time, extending the deadline for filing the Request for Continued Examination and submitting the supplemental response to the May 25, 2007 Office Action from August 25, 2007 to September 25, 2007.

One (1) independent claim has been added and three dependent claims. Accordingly, an added claims fee of \$250.00 is due.

The fee of \$120.00 specified in 37 CFR §1.17(a)(1) for the one (1) month extension, the added claims fee of \$250.00, and the fee of \$790.00 for the Request for Continued Examination, for a total of \$1260.00, is being paid by Electronic Funds Transfer. Authorization is hereby given to charge any deficiency in applicable fees for this response to Deposit Account No. 13-4365 of Moore & Van Allen PLLC.

**Conclusion**

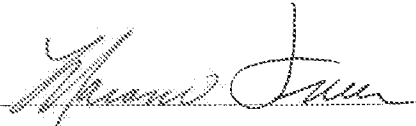
Based on the foregoing, claims 1, 3-5, 7 and 8 are in form and condition for allowance. Authorization is hereby given to charge any deficiency in applicable fees for this response to Deposit Account No. 13-4365 of Moore & Van Allen PLLC. If any additional issues remain, the Examiner is requested to contact the undersigned attorney at (919) 286.8090 to discuss same.

Respectfully submitted

Date: \_\_\_\_\_

9/25/07

By: \_\_\_\_\_



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